

REMARKS

This present Response is being filed in reply to the Office Action dated October 17, 2006. Applicant requests a one month extension of time, including the associated fee, extending the period of response to and including February 17, 2007

By the present amendment, claim 1 is amended. Support for the amendment to claim 1 can be found in paragraph 31 of the specification and claim 5 as originally filed. No new matter has been added. Claims 1, 3-7 and 9-16 are pending in the application.

Rejection Pursuant to 35 U.S.C. § 102(e)

The Office Action rejected claims 1, 3 and 4 pursuant to 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,613,053 to Collins. Applicant respectfully traverses this rejection based on the above amendment and following arguments.

By the present amendment, claim 1 is amended to recite the subject matter of canceled claim 5, in particular, that the proximal head of the bone anchor tapers from a proximal end to the distal portion of the bone anchor. The Office Action acknowledges that Collins does not disclose a proximal head of the bone anchor being tapered.

For at least this reason, Applicant respectfully request that the rejection of claim 1, and claims 3 and 4 dependant thereon, under 35 U.S.C. § 102(e) be withdrawn.

Rejection Pursuant to 35 U.S.C. § 103(a)

The Office Action rejected claims 5, 7, 10-14 and 16 pursuant to 35 U.S.C. § 103(a) as being unpatentable over Collins (US 6,613,053) in view of Frigg et al (US 6,206,881). Applicant respectfully traverses this rejection based on the above amendment and following arguments.

Claim 1

Claim 1 is amended to include the subject matter of canceled claim 5, which was rejected by the Office Action as being unpatentable over Collins in view of Frigg. In particular, claim 1 is amended to recite that the proximal head of the bone anchor tapers from

a proximal end to the distal portion of the bone anchor. The Office Action acknowledges that Collins does not disclose a proximal head of the bone anchor being tapered. The Office Action asserted that Frigg describes a proximal head that is tapered and that it would have been obvious to one of ordinary skill in the art to modify the device of Collins as taught by Frigg. Applicant respectfully disagrees.

Collins describes the head 18 of the bone screw 14 comprising a plurality of resilient deformable fingers 22 each including an outwardly projecting rib 24 extending circumferentially of the head 18 intermediate opposite ends of the fingers 22 for snap fit engagement in the annular groove 16 of the plate aperture 11. The snap fit engagement of the outwardly projecting rib 24 and the annular groove 16 prevents back out of the screw 14 from the plate. (see col. 2, lines 6-10, 35-45 and lines 42-51 of Collins) Modifying the head 18 of bone screw 14 of Collins to the taper described in Frigg would necessitate removal of the outwardly projecting rib 24 and, in the absence of the outwardly projecting rib 24, the bone screw 14 may be free to back out from the plate. For at least this reason, one of ordinary skill in the art would not be motivated to modify the head 18 of the bone screw 14 of Collins to the taper described in Frigg.

Moreover, Frigg describes a plate (1) with holes (3) that may be fitted with threads (8) that advantageously match the threads (9) or spiral structures on the bone screw head (5) (col.2 lines 22-26 of Frigg). The interaction of the threads on the bone screw with the threads fitted within the holes of the plate of Frigg inhibit back out of the bone screw from the plate. Accordingly, one of ordinary skill in the art when contemplating modifying the bone screw/plate arrangement of Collins with that of Frigg as proposed by the Office Action, would consider incorporating the threads fitted within the plate holes and matching threads on the bone screw head of Frigg to inhibit back out of the screw from the plate. As described in Applicant's June 5, 2005 response and August 9, 2006 response, the threads (8) fitted within the plate holes of Frigg cannot anticipate the plurality of concentric annular bores as recited in claim 1.

For at least these reason, Applicant does not consider the claim 1 as amended to be unpatentable over Collins in view of Frigg.

Claims 7, 10-14 and 16

Independent claim 7 recites a plurality of concentric annular bores of the plate hole forming a generally frusta-conically shaped, stepped inner wall surface of the hole. Independent claims 10 and 12 recite a generally stepped-shaped inner wall surface provided by a plurality of steps formed in the inner wall of at least one hole of the plate, a plurality of the steps having an annular peak, and a plurality of the annular peaks being aligned in a generally frusta-conical shape. The Office Action acknowledged that Collins fails to disclose concentric annular bores forming a generally frusta-conical shaped hole. The Office Action asserted that Frigg describes bores forming generally frusta-conical shaped holes and that it would have been obvious to one of ordinary skill in the art to modify the device of Collins as taught by Frigg. Applicant respectfully disagrees.

Collins describes the head 18 of the bone screw 14 comprising a plurality of resilient deformable fingers 22 each including an outwardly projecting rib 24 extending circumferentially of the head 18 intermediate opposite ends of the fingers 22 for snap fit engagement in the annular groove 16 of the plate aperture 11. The snap fit engagement of the outwardly projecting rib 24 and the annular groove 16 prevents back out of the screw 14 from the plate. (see col. 2, lines 6-10, 35-45 and lines 42-51 of Collins) Modifying aperture 11 in the plate of Collins to include annular bores or steps the peaks of which form a frusta-conical shape as the Examiner asserts is described in Frigg would necessitate removal of the annular groove 16 of the aperture 11 of the Collins plate and, in the absence of the annular groove 16, outwardly projecting rib 24 would lack a structure within the plate aperture to engage and the bone screw 14 may be free to back out from the plate. For at least this reason, one of ordinary skill in the art would not be motivated to modify aperture 11 in the plate of Collins to include annular bores or steps the peaks of which form a frusta-conical shape.

Moreover, Frigg describes a plate (1) with holes (3) that may be fitted with threads (8) that advantageously match the threads (9) or spiral structures on the bone screw head (5) (col.2 lines 22-26 of Frigg). The interaction of the threads on the bone screw with the threads fitted within the holes of the plate of Frigg secure the bone screw head to the plate and inhibit back out of the bone screw from the plate. Accordingly, one of ordinary skill in the art when contemplating modifying the bone screw/plate arrangement of Collins with that of Frigg,

would consider incorporating the threads fitted within the plate holes and matching threads on the bone screw head of Frigg to secure the bone screw head to the plate and to inhibit back out of the screw from the plate. As described in Applicant's June 5, 2005 response and August 9, 2006 response, the threads (8) fitted within the plate holes of Frigg cannot anticipate the plurality of concentric annular bores as recited in claim 7 or the generally stepped-shaped inner wall surface that includes a plurality of steps having a generally annular peak as recited in independent claims 10 and 12.

For at least this reason, Applicant does consider independent claims 7, 10, and 12, and claims 11, 13, 14 and 16 dependent thereon, to be unpatentable over Collins in view of Frigg. Therefore, Applicant respectfully requests that the rejection of claims 7, 10, and 12, and claims 11, 13, 14 and 16 dependent thereon, under 35 U.S.C. § 103 be withdrawn.

Conclusion

In view of the remarks set forth above, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested. If there are any remaining issues or the Examiner believes that a telephone conversation with the Applicant's attorney would be helpful in expediting the prosecution of the application, the Examiner is invited to call the undersigned at (508) 880-8488.

Respectfully submitted,

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